



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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GOVERNOR

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COMMISSIONER

US Naval Air Station Brunswick
Cumberland County
Brunswick, Maine
A-268-71-AD-M (SM)

Departmental
Findings of Fact and Order
Air Emission License
Amendment #3

After review of the air emissions license amendment application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., §344 and §590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

1. US Naval Air Station Brunswick (NASB) was issued Air Emission License A-268-71-AA-R on December 7, 2004, permitting the operation of emission sources associated with their military flight operations facility. The license was subsequently amended on August 22, 2005 (A-268-71-AB-A) and on November 20, 2006 (A-268-71-AC-A).
2. The equipment addressed in this license is located on the Old Bath Rd in Brunswick, Maine.
3. NASB has requested a minor revision to their license in order to include the licensing of an 80 kW generator to be installed in Building 295. In addition, NASB has requested that several pieces of equipment which have been permanently shut down be removed from their license.

B. Emission Equipment

1. The following is new equipment being added to this air emission license:

Electrical Generation Equipment

<u>Equipment</u>	<u>Power Output (kW)</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Firing Rate (gal/hr)</u>	<u>Fuel Type, % sulfur</u>
Engine #63 (Bldg 295)	80	0.9	6.9	diesel, 0.05%

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2. The following equipment was never installed and NASB has requested it be removed from the air emission license:

Electrical Generation Equipment

<u>Equipment</u>	<u>Power Output (kW)</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Firing Rate (gal/hr)</u>	<u>Fuel Type, % sulfur</u>
Engine #62 (Bldg 654)	750	7.32	53.4	diesel, 0.05%

3. The following equipment has been permanently shut down and/or removed from the facility. NASB has requested that this equipment be removed from the air emission license:

Fuel Burning Equipment

<u>Equipment</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Maximum Firing Rate</u>	<u>Fuel Type, % sulfur</u>
Hangar 1, Boiler #1	5.50	39.3 gal/hr	#2 fuel oil / #1 fuel oil / natural gas, 0.50%
Hangar 1, Boiler #2	5.50	39.3 gal/hr	#2 fuel oil / #1 fuel oil / natural gas, 0.50%
Hangar 1, Boiler #3	5.50	39.3 gal/hr	#2 fuel oil / #1 fuel oil / natural gas, 0.50%

4. The boilers located in Buildings 211 and 516 have been shut down. However, NASB has requested that they remain included in the air emission license in case situations change in the future. A license amendment is not required to re-start these boilers.

C. Application Classification

This amendment will not increase emissions of any pollutant. Therefore, this modification is determined to be a minor revision and has been processed as such.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 CMR 100 (last amended December 24, 2005). Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in *Definitions Regulation*, 06-096 CMR 100 (last amended December 24, 2005). BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

B. NSPS Generator

NASB proposes the addition of Engine #63 to power an emergency generator.

Emergency Generator is defined as any stationary internal combustion engine whose operation is limited to emergency situations and required testing and maintenance. Examples include stationary engines used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary engines used to pump water in the case of fire or flood. Stationary engines used to supply power to an electric grid or that supply power as part of a financial arrangement with another entity are not considered to be emergency engines.

Engine #63 was ordered after July 11, 2005 and manufactured after April 1, 2006. Therefore, Engine #63 is subject to New Source Performance Standards 40 CFR Part 60, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*.

A summary of the BACT analysis for Engine #63 (80 kW) is the following:

1. Engine #63 shall fire only diesel fuel with a maximum sulfur content not to exceed 500 ppm.
2. Beginning October 1, 2010, Engine #63 shall fire only diesel fuel with a maximum sulfur content not to exceed 15 ppm.

3. The combined fuel usage to the engines at NASB of diesel fuel and natural gas shall not exceed the equivalent of 4,100 MMBtu/year heat input, based on a 12-month rolling total.
4. Engine #63 shall be limited to 100 hr/yr of operation for maintenance checks and readiness testing, based on a 12 month rolling total. Compliance shall be demonstrated by a written log of all generator operating hours.
5. Engine #63 shall be equipped with a non-resettable hour meter.
6. The PM and PM₁₀ limits are derived from 06-096 CMR 103.
7. NO_x, CO, and VOC emission limits are based upon AP-42 data dated 10/96.
8. NASB shall operate and maintain Engine #63 in accordance with the manufacturer's written instructions. NASB shall not change settings that are not approved in writing by the manufacturer.
9. Visible emissions from Engine #63 shall not exceed 20% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block averages in a continuous 3-hour period.

C. Annual Emissions

NASB shall be restricted to the following annual emissions, based on a 12 month rolling total:

Total Licensed Annual Emission for the Facility

Tons/year

(used to calculate the annual license fee)

	PM	PM₁₀	SO₂	NO_x	CO	VOC	HAP
Fuel Burning	21.0	21.0	88.1	61.3	14.4	0.9	-
Diesel Engines	0.3	0.3	0.1	9.1	2.0	0.7	-
Engine #53	0.1	0.1	-	1.5	2.5	0.2	-
Engine #57	0.1	0.1	-	2.7	4.6	0.4	-
Process Emissions	-	-	-	-	-	45.8	9.9
Total TPY	21.5	21.5	88.2	74.6	23.5	48.0	9.9

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-268-71-AD-M subject to the conditions found in Air Emission License A-268-71-AA-R, in amendments A-268-71-AB-A, and A-268-71-AC-A, and in the following conditions.

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

The following shall replace Conditions (16)(C) and (D) of Air Emission Licenses A-268-71-AA-R and A-268-71-AB-A:

- C. Emissions shall not exceed the following limits. Compliance shall be demonstrated by stack testing upon request by the Department.

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Hangar 5, Boilers #1, #2, #3, #4	PM	0.12	06-096 CMR 103, Section 2(B)(1)(a)
Hangar 6, Boilers #1, #2, #3	PM	0.05	06-096 CMR 115, BPT
Hangar 6, Make-up units #1, #2	PM	0.05	06-096 CMR 115, BPT
Hangar 6, Make-up units #3, #4	PM	0.05	06-096 CMR 115, BPT
Bldg 86, Boilers #1, #2, #3	PM	0.12	06-096 CMR 103, Section 2(B)(1)(a)
Bldg 211 Boilers #3, #4, #5	PM	0.12	06-096 CMR 103, Section 2(B)(1)(a)
Bldg 250, Boilers #1, #2, #3	PM	0.12	06-096 CMR 103, Section 2(B)(1)(a)

- D. Emissions shall not exceed the following for each unit. Compliance shall be demonstrated by stack testing upon request by the Department.
[06-096 CMR 115, BPT]

Emission Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Hangar 5, Boilers #1, #2, #3, #4	0.60	0.60	2.52	1.75	0.41	0.03
Hangar 5, Water Heater	0.12	0.12	0.50	0.35	0.08	0.01
Hangar 6, Boilers #1, #2, #3	0.15	0.15	--	0.29	0.25	0.02
Hangar 6, Make-up #1, #2	0.50	0.50	0.01	0.97	0.82	0.05
Hangar 6, Make-up #3, #4	0.10	0.10	--	0.20	0.17	0.01
Bldg 25, Water Heater	0.06	0.06	--	0.12	0.10	0.01
Bldg 54, Boiler #1	0.26	0.26	1.11	0.77	0.18	0.01
Bldg 86, Boilers #1, #2, #3	0.36	0.36	1.51	1.05	0.25	0.02
Bldg 102, Make-up #1	0.08	0.08	--	0.15	0.12	0.01
Bldg 211 Boiler #3	0.66	0.66	2.77	1.93	0.45	0.03
Bldg 211 Boilers #4, #5	0.75	0.75	3.12	2.17	0.51	0.03
Bldg 250, Boilers #1, #2, #3	0.72	0.72	3.02	2.10	0.49	0.03
Bldg 250, Make-up #1	0.14	0.14	--	0.27	0.22	0.01
Bldg 512, Boiler #1	0.15	0.15	0.63	0.44	0.10	0.01
Bldg 512, Boilers #2, #3	0.15	0.15	0.63	0.44	0.10	0.01
Bldg 516 Boiler #1	0.23	0.23	0.98	0.68	0.16	0.01
Bldg 594, Boilers #1, #2	0.18	0.18	0.76	0.53	0.12	0.01
Bldg 645, Boiler #1	0.20	0.20	0.86	0.60	0.14	0.01
Bldg 750, Water Heater #1, #2	0.09	0.09	--	0.18	0.15	0.01
Bldg 750, Make-up #1	0.06	0.06	--	0.12	0.10	0.01

The following shall replace Condition (17)(B) of Air Emission License A-268-71-AA-R:

- B. Prior to October 1, 2010, sulfur content of the diesel fuel fired shall not exceed 500 ppm. Beginning October 1, 2010, the diesel fuel fired shall not exceed 15 ppm. [40 CFR 60.4207(a)&(b) and 06-096 CMR 115]

The following shall replace Condition (17)(D) of Air Emission Licenses A-268-71-AA-R and A-268-71-AC-A:

- D. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Engine #47	PM	0.12	06-096 CMR 103, Section 2(B)(1)(a)
Engine #49	PM	0.12	06-096 CMR 103, Section 2(B)(1)(a)
Engine #50	PM	0.12	06-096 CMR 103, Section 2(B)(1)(a)
Engine #57	PM	0.12	06-096 CMR 103, Section 2(B)(1)(a)

The following shall replace Condition (17)(E) of Air Emission Licenses A-268-71-AA-R, A-268-71-AB-A, and A-268-71-AC-A:

E. Emissions shall not exceed the following for each unit:
[MEDEP Chapter 115, BPT]

Emission Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Engine #4	0.27	0.27	0.12	9.88	2.13	0.78
Engines #18-1, 18-2, 18-3, 18-4	0.34	0.34	0.14	12.35	2.66	0.98
Engine #26	0.35	0.35	0.15	12.92	2.78	1.03
Engine #27	0.27	0.27	0.12	9.88	2.13	0.78
Engine #29	0.32	0.32	0.14	11.82	2.55	0.94
Engine #30	0.12	0.12	0.05	4.32	0.93	0.34
Engine #31	0.09	0.09	0.04	3.44	0.74	0.27
Engine #32	0.15	0.15	0.06	5.38	1.16	0.43
Engine #42	0.15	0.15	0.06	5.38	1.16	0.43
Engine #44	0.07	0.07	0.03	2.60	0.56	0.21
Engine #46	0.09	0.09	0.04	3.44	0.74	0.27

Emission Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Engine #47	1.05	1.05	0.45	28.10	7.46	0.79
Engine #48	0.19	0.19	0.08	6.88	1.48	0.55
Engine #49	0.47	0.47	0.20	12.48	3.32	0.35
Engine #50	0.37	0.37	0.16	9.98	2.65	0.28
Engine #51	0.27	0.27	0.11	9.79	2.11	0.78
Engine #52	0.23	0.23	0.10	8.60	1.85	0.68
Engine #53	0.13	0.13	--	5.86	9.86	0.93
Engine #55	0.10	0.10	0.04	3.53	0.76	0.28
Engine #56	0.12	0.12	0.05	4.32	0.93	0.34
Engine #57	0.25	0.25	--	10.83	18.23	1.72
Engine #58	0.35	0.35	0.15	12.92	2.78	1.03
Engine #59	0.29	0.29	0.13	10.76	2.32	0.85
Engine #63	0.11	0.11	0.05	4.15	0.89	0.33

The following shall replace Condition (17)(F) of Air Emission License A-268-71-AA-R:

- F. Visible emissions from the each engine shall not exceed 20% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block averages in a continuous 3-hour period. [06-096 CMR 115, BPT]

The following shall replace Condition (25) of Air Emission Licenses A-268-71-AA-R:

(25) **Annual Emission Statement**

In accordance with *Emission Statements*, 06-096 CMR 137 (last amended November 8, 2008), the licensee shall annually report to the Department the information necessary to accurately update the State's emission inventory by means of:

- 1) A computer program and accompanying instructions supplied by the Department; or
- 2) A written emission statement containing the information required in 06-096 CMR 137.

The emission statement must be submitted as specified by the date in 06-096 CMR 137.

Conditions (26) and (27) of Air Emission License A-268-71-AA-R are deleted.

The following are New Conditions:

(28) **Engine #63**

- A. Engine #63 shall be limited to 100 hr/yr of operation for maintenance checks and readiness testing, based on a 12 month rolling total. Compliance shall be demonstrated by a written log of all engine operating hours. [40 CFR 60.4211(e)]
- B. Engine #63 shall be equipped with a non-resettable hour meter. [40 CFR 60.4209(a)]
- C. Engine #63 is subject to PM, CO, and NO_x + VOC emission requirements set forth in 40 CFR 60, Subpart III. Compliance with these emission requirements shall be demonstrated by certification from the manufacturer that this engine class meets the appropriate Tier standards. [40 CFR 60, Subpart III]

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D. NASB shall operate and maintain Engine #63 in accordance with the manufacturer's written instructions. NASB shall not change settings that are not approved in writing by the manufacturer. [40 CFR 60.4211(a)]

DONE AND DATED IN AUGUSTA, MAINE THIS 20th DAY OF July, 2009.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: James P. Bruch
DAVID P. LITTELL, COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-268-71-AA-R.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 6/22/09

Date of application acceptance: 6/22/09

Date filed with the Board of Environmental Protection: _____

This Order prepared by Lynn Ross, Bureau of Air Quality.

